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The Relevance of Non-financial Performance Measures for CEO Compensation: Evidence from the Airline Industry

ANTONIO DAVILA adavila@stanford.edu
Graduate School of Business, Stanford University, Stanford, CA 94305

MOHAN VENKATACHALAM* vmohan@duke.edu
Fuqua School of Business, Duke University, PO BOX 90120, Durham, NC 27708

Abstract. This paper investigates the role of non-financial performance measures in executive compensation. Using a sample of airline firms we document that passenger load factor, an important non-financial measure for firms in this industry, is positively associated with CEO cash compensation. This association is significant after controlling for traditional accounting performance measures (return on assets) and financial performance measures (stock returns). This evidence is consistent with the hypothesis that non-financial measures provide incremental information about CEOs' actions over financial measures and hence, receive a positive weight in compensation contracts. We also explore cross-sectional differences in the importance of non-financial performance measures. We find weak evidence that CEO power and the noise of financial performance measures impact the relationship between non-financial performance measures and cash compensation.

Keywords: non-financial performance measures, CEO compensation, passenger load factor, airline industry

JEL Classification: J33, L25, L93, M41, M52

Traditionally, firms have used accounting measures such as earnings, return on assets or return on investment to reward managers. Recent evidence indicates that firms are increasingly using non-financial performance measures such as customer satisfaction and product quality in the contracting process within firms (e.g., Ittner et al., 1997; Banker et al., 2000; Nagar and Rajan, 2001). The reason for the use of non-financial measures in compensation contracts is that they provide information incremental to accounting measures in rewarding and motivating managers. For CEOs of publicly traded firms, however, forward-looking stock prices play a significant role in compensation contracts (Murphy, 1998). The rationale for using stock prices in contracting is that they capture both the current and future impact of CEOs' actions, and accordingly, may represent a sufficient statistic for accounting and non-financial performance measures. Despite the fact that stock prices impound information contained in accounting and non-financial measures, agency theory suggests that these measures will complement stock prices in CEO compensation (Feltham and Xie, 1994). In support of this theory, several researchers document the role of accounting

*Corresponding author.

numbers incremental to market-based measures in CEO compensation contracts (e.g., Lambert and Larcker, 1987; Sloan, 1993). However, little empirical research exists on the economic importance of non-financial performance measures for CEO compensation. The objective of this study is to provide evidence on this issue.

A direct approach to investigate whether CEOs are evaluated and compensated based on non-financial performance measures would entail an examination of the explicit use of non-financial measures in compensation contracts. Research by Ittner et al. (1997) uses bonus related disclosures in proxy statements to examine the determinants of the relative weight placed on non-financial performance measures in calculating bonus payments to CEOs.[1] However, as they acknowledge in their study, their sample is limited to firms that have chosen to disclose the specific relative weights on non-financial measures in bonus contracts. The generally limited disclosures about compensation contracts in the proxy statements suggest that many features of executive compensation contracts including the use of non-financial performance measures may be implicit.

We examine the premise that non-financial measures are statistically and economically important for compensating CEOs by exploring whether CEO compensation behaves as if CEOs are evaluated based on non-financial performance measures. Because non-financial measures of performance are not comparable across industries unlike accounting or stock market performance measures, we focus our study on one industry: the airline industry. Arguably, non-financial performance measures have incremental information about the performance of CEOs of airline firms because they may capture performance dimensions not fully reflected in accounting or stock market performance measures, they exhibit a better signal-to-noise behavior, or they allow the design of contracts that are more congruent.

The non-financial performance measure we use is passenger load factor for airline firms. Passenger load factor, measured as the number of passenger-miles (i.e., the total number of miles flown by all passengers) divided by the total number of seat miles available, is among the most relevant measures in this industry (Francis et al., 2003). It captures information about an important aspect of airline management: the ability to use installed capacity. Unlike other non-financial performance measures (e.g., customer satisfaction) that are often viewed as leading indicators of firm performance, passenger load factor captures operational efficiency of an airline and hence is more of a current indicator of firm performance. Previous research (Behn and Riley, 1999; Francis et al., 2003) finds that passenger load factor has implications beyond traditional accounting measures for assessing firm performance and equity valuation. Passenger load factor, by no means, is a comprehensive measure of CEO performance. For example, it does not capture the influence that CEO's actions may have on future performance (investment decisions), on negotiating the cost of inputs (fuel or salary costs) or the prices of outputs (ticket sales). Accordingly, this measure is not likely to be used in isolation for contracting. Nevertheless, it is likely to capture information about an important dimension of CEO current performance with more precision than accounting and stock-based measures (Banker and Datar, 1989). Thus, we posit that passenger load factor will have incremental information content to be used in the design of CEOs' contracts for airline firms.

We test this hypothesis by examining the association between passenger load factor and CEO compensation for a sample of airline firms, after controlling for accounting and market-based performance measures. Focusing on the airline industry and using a cross-sectionally comparable non-financial performance measure has the distinct advantage of increasing the power of empirical tests. We acknowledge, however, that focusing on one industry limits the generalizability of our findings.

Our sample is comprised of 246 firm-year observations between 1986 and 2000 from 35 airline firms. For the empirical analyses we consider both aggregate CEO compensation as well as its components: cash compensation (i.e., salary and bonus) and option compensation. We find that the passenger load factor is primarily associated with the cash component of CEO compensation. Moreover, this performance measure adds significant incremental explanatory power (increase in R^2 of 10%) to a regression of CEO cash compensation on stock returns and accounting return on assets. In economic terms, we find that a 10% increase in the passenger load factor (one standard deviation) is associated with an increase of approximately $134,000 (at the mean) in CEO cash compensation (or 37% of base salary). This result is consistent with passenger load factor being an important dimension of current firm performance and being rewarded through the cash component of total compensation. Our results are robust to a ''changes'' specification that addresses inference problems associated with a ''levels'' specification because of omitted variables.

We also extend our analysis to examine cross-sectional differences in the relation between passenger load factor and CEO compensation. In particular, we investigate whether CEO power and noise in the stock return performance measure (proxied by return volatility) affect the association between non-financial performance measure and CEO compensation. Our results suggest that firms with powerful CEOs (e.g., where CEO is also the chairman of the Board) and high levels of stock return volatility place more weight on passenger load factor in determining CEO compensation. However, because this result obtains only in the ''levels'' specification we view the evidence on the cross-sectional differences in the association between passenger load factor and CEO compensation as weak.

The paper extends extant literature on the role of non-financial measures in two ways. First, prior work (e.g., Ittner et al., 1997) takes the use of non-financial measures as given, and examines factors that influence the relative weights on non-financial performance measures, conditional on firms using such measures. In contrast, we do not assume the use of non-financial measures in CEO compensation. Rather, we test whether non-financial measures provide incremental information regardless of whether such measures are implicitly or explicitly used.[2] Thus, our study is not limited to firms that explicitly disclose the use of non-financial performance measures but includes firms that may implicitly use the information contained in these measures for subjective assessments of managerial performance. Second, we partition the compensation variable into its different components: cash compensation and option compensation, to test how non-financial performance measures affect different components of CEO compensation.

The paper proceeds as follows: Section 1 develops our hypothesis and discusses related research. Section 2 describes the research method used to test our hypothesis.

Section 3 describes the sample and measurement of variables. Section 4 presents our primary empirical findings while Section 5 reports results from additional analyses. In Section 6, we present our conclusions.

1. Hypothesis Development and Related Research

In this section we present the theoretical background that guides our hypothesis on the use of non-financial measures in CEO compensation. We begin with the concept of sufficient statistic in a single action agency setting and then extend the argument to multiple actions setting that better captures the dynamics of CEO activity. An important theoretical justification for the use of non-financial performance measures in compensation contracts is based on the concept of sufficient statistic (Holmstrom, 1979). Non-financial performance measures are useful in contracting if they provide incremental information about the agent's effort beyond that contained in other available measures, including accounting data and stock prices. A measure may provide incremental information if it captures additional dimensions of performance not reflected in existing measures, or if it contains less noise relative to other measures. The weight on a performance measure in compensation contracts can be shown to be a function of its signal to noise ratio (Banker and Datar, 1989).

Accounting performance measures do not capture all the dimensions of CEO performance and, therefore non-financial performance measures may provide incremental information beyond accounting measures (Banker and Datar, 1989). In contrast, stock price represents an aggregate measure of future value that impounds all existing public information including non-financial measures. If stock price subsumes information in other performance measures then such other measures will be redundant for contracting. However, even if stock price may be a sufficient statistic from a valuation perspective, it may not be so for contracting purposes. Theoretical work by Bushman and Indjejikian (1993), Kim and Suh (1993), and Feltham and Wu (1999) show that when stock price is an inefficient aggregator of publicly available information, the role for other performance measures emerge in contracting. Recent work (e.g., Rajgopal et al., 2003) suggests that stock prices do not efficiently incorporate the implications of non-financial measures. Thus, a stock price-based performance measure may not necessarily represent a sufficient statistic for non-financial information.

Recent studies argue that even if stock prices efficiently incorporate information in financial and non-financial performance measures, they would still be considered in contracting. First, stock prices may suffer from higher levels of noise, i.e., reflect variance in performance unrelated to the agent's effort (Banker and Datar, 1989); and hence, including stock prices for contracting imposes additional risk on the agent. To reduce this additional risk, additional performance measures may be included in contracts. The second argument stems from the lack of congruency of stock prices for contracting (Feltham and Xie, 1994; Datar et al., 2001). Feltham and Xie (1994) show that while stock prices aggregate all existing public information they may do so in a way that is not congruent with the weights required on the various signals from a

contracting perspective. In other words, the weights on different signals that are implicit in determining the stock price are established with the objective of valuing the firm and not with the objective of assessing the performance of the manager. Thus, "price is *not* necessarily, nor even likely to be, a perfectly congruent performance measure" (Feltham and Xie, 1994, p. 447). If stock prices are not congruent with the intended mix of actions of the CEO, then we expect additional performance measures to be included in the contracting process. Finally, stock prices may be complemented with alternative performance measures when CEOs are allowed to trade (Baiman and Verrecchia, 1995). In this case, the compensation contract not only rewards the CEOs' effort but also determines their trading incentives.

The preceding discussion suggests that non-financial measures are likely to be included in efficient contracts in addition to accounting and market-based performance measures. We test this prediction in the context of the airline industry using passenger load factor, a common performance indicator in terms of productivity, as the non-financial performance measure (Schefczyk, 1993). Passenger load factor measures the amount of revenue passenger miles that an airline can generate based on the capacity of available passenger miles. Passenger load factor may have the properties required to provide incremental information to accounting and market-based performance measures for four reasons. First, airline firms have a high operational leverage where fixed costs account for a significant proportion of their total costs. Thus, capacity utilization is a key non-financial measure to explain airline performance (Behn and Riley, 1999; Francis et al., 2003).[3] Also, unlike other non-financial measures (e.g., customer satisfaction index) used in prior research that are viewed as *leading* indicators of firm performance, passenger load factor is a *current* indicator of firm performance in that it captures operational efficiency beyond financial performance measures such as return on assets. Consistent with this argument, Behn and Riley (1999) show that passenger load factor is contemporaneously associated with operating profitability.[4]

Second, analysts often consider passenger load factor as an important performance metric for airline firms in addition to other performance measures (e.g., Behn and Riley, 1999; Francis et al., 2003). Moreover, Francis et al. (2003) find that non-financial performance measures such as passenger load factor (in combination with other metrics such as revenue passenger miles) add incremental explanatory power to earnings based metrics for equity valuation. Third, from a signal to noise perspective, passenger load factor captures an operational dimension – capacity utilization – that is less noisy than accounting or market measures. While financial measures incorporate noise from sources in addition to that in passenger load factor, such as changes in cost of inputs and ticket prices, passenger load factor is not directly influenced by external factors over which the CEO has little or no influence (e.g., fuel costs) but that are reflected in accounting and market measures. Thus, including a measure with a superior signal to noise ratio may increase the overall congruity of the compensation contract and decrease the risk that the CEO bears. Finally, while prior research shows that information in passenger load factor is impounded in prices, it is unclear that such information is incorporated either efficiently or in a manner consistent with the weights appropriate for goal congruence. Moreover, this

measure is likely to be less noisy than accounting measures of performance or stock prices because it is not easily manipulable. The combination of these two characteristics is likely to lead the passenger load factor measure to have a signal-to-noise ratio attractive enough to receive a significant weight in CEO compensation.

In contrast, the incremental benefits of including passenger load factor may not be high enough compared to the incremental costs of contracting with an additional measure. It is also plausible that other accounting measures of capacity utilization, e.g., sales turnover may capture the information contained in passenger load factor. Further, accounting and stock price together may appropriately capture the information in passenger load factor and make the latter measure redundant to CEO's performance. Finally, shareholders may choose to contract on stock performance as suggested in Core et al. (2003) regardless of the potential contracting efficiencies associated with alternative non-market based performance measures. This is because a substantial portion of the CEO compensation relates to price-based incentives from stock and options granted to CEO. Thus, whether passenger load factor provides incremental explanatory power for CEO compensation beyond accounting and market-based measures remains an empirical question.

2. Research Method

We infer the use and economic importance of non-financial performance measures in compensation contracts by examining the cross-sectional relation between CEO compensation and passenger load factor. In general, identifying important non-financial performance measures is particularly difficult because a multitude of non-financial performance measures such as customer satisfaction, employee satisfaction, product innovation, etc., are commonly used in compensation contracts. Furthermore, cross-sectionally comparable proxies for such measures are not easily obtainable. Therefore, we focus on one industry where non-financial performance measures are likely to have incremental information beyond accounting measures and stock price. From a research design perspective, the passenger load factor measure, has the appealing characteristic of being cross-sectionally comparable across airline firms.

Following the predictions developed in the previous section, we examine the incremental importance of passenger load factor for CEO compensation by tests of association between the two variables after controlling for other performance measures. Specifically, we test the following empirical specification:

$$\text{Compensation}_{\text{it}} = \delta_1 + \sum \delta_{2k}{}^{*}\ \text{Performance}_{\text{kit}} + \kappa \tag{1}$$

where k performance measures including passenger load factor are used as independent variables. If a performance measure is important for determining compensation we would expect δ_2 to be positive. Several studies have used a similar "levels" specification (Murphy, 1985; Lambert and Larcker, 1987; Yermack, 1995; Bushman et al., 1996;

Core et al., 1999). However, such a specification suffers from omitted firm specific determinants of CEO compensation and other unknown variables.[5]

We address this problem by modifying equation (1) to control for other economic determinants of CEO compensation as follows:

$$\text{Compensation}_{it} = \delta_1 + \sum \delta_{2k}{}^{*}\ \text{Performance}_{kit} + \sum \delta_{3k}{}^{*}\ \text{Controls}_{kit} + \kappa \qquad (1')$$

We consider several control variables. First, we control for firm size. Second, we control for a firm's risk that is predicted to be positively associated with the level of compensation. Third, we control for the effect of CEO ownership on compensation. The sign for this control variable is uncertain. If CEO ownership captures CEO power, then we expect higher CEO ownership to be positively related to the level of compensation (Holderness and Sheehan, 1988). On the other hand, agency theory (Jensen and Meckling, 1976) identifies low levels of stock ownership as a symptom of agency problems. Thus, firms with lower CEO ownership are likely to design compensation contracts with a higher level of pay for performance. This, in turn, implies higher levels of risk for the CEO and thus, a risk averse CEO would expect higher compensation for the increased risk. Consistent with this latter prediction, recent empirical work by Core et al. (1999) finds a negative relation between CEO ownership and compensation. Fourth, we control for CEO tenure that captures both CEO power and the quality of the CEO (Bushman et al., 1996). CEOs with greater power to influence the board are more likely to extract higher compensation. Regardless of CEO power, higher tenure may reflect better quality CEO and hence may have higher expected compensation. Thus, we predict CEO tenure to be positively related to compensation. Finally, we control for growth opportunities. Smith and Watts (1992) document that firms with more growth options have higher executive compensation. Hence, we predict a positive relation between growth opportunities and compensation.

As an alternative solution to address the omitted variable problem inherent in equation (1), we consider a "changes" version of specification (1) wherein we relate changes in compensation to change in performance (Janakiraman, 1992; Smith and Watts, 1992). That is, we estimate the following model:

$$\Delta\text{Compensation}_{it} = \delta_1 + \sum \delta_{2k}{}^{*}\Delta\text{Performance}_{kit} + \kappa \qquad (2)$$

This specification allows the pooling of observations across firms as firm-specific determinants of compensation are controlled implicitly because such determinants are assumed to be constant across time. Nevertheless, to be consistent with the expanded specification in (1′) we estimate the following modified version of equation (2):

$$\Delta\text{Compensation}_{it} = \delta_1 + \sum \delta_{2k}{}^{*}\Delta\text{Performance}_{kit} + \sum \delta_{3k}{}^{*}\Delta\text{Controls}_{kit} + \kappa \qquad (2')$$

In estimating the empirical specifications, we explore the incremental relevance of passenger load factor for two components of CEO compensation: cash and option compensation. In principle, the impact of passenger load factor could occur through, bonus (cash) component of CEO compensation, and/or through additional stock and option grants. However, if the impact of passenger load factor occurs through only one component of compensation, then the impact on overall compensation is likely to be muted. In other words, examining the relation between passenger load factor and total compensation alone will likely result in low power of tests.

Furthermore, the relation between passenger load factor and the two components of compensation are not necessarily similar. With respect to cash component, it is reasonable to expect the relationship to be positive as we relate performance measures with compensation in the current period. In contrast, the relationship between option compensation and non-financial measures is less obvious. This is because option compensation may not only reward current performance but also motivate future performance. A positive relationship is expected if option compensation relates to reward for current performance. However, firms with poor current performance may award more options to "restore" incentives and thereby motivate CEOs to improve long-term performance. In such an instance, we would posit a negative relation between option compensation and performance measures. Hence, we do not have a sign prediction for the relation between passenger load factor and option compensation.

In sum, the previous discussion suggests that if passenger load factor is at all relevant to the contracting process, it is most likely to be observed in the cash portion of CEO compensation.

3. Sample Selection, Measurement of Variables and Descriptive Statistics

3.1. Sample

To build our sample, we obtain a list of all airline firms from the EDGAR online database. From this list, we eliminate firms for which we are unable to collect financial and stock price information from Compustat and CRSP databases. We hand-collected CEO compensation data from the proxy statements available from EDGAR online and Laser Disclosure. Passenger load factor was hand-collected from the World Air Transport Statistics published yearly by IATA (International Air Transport Association) and from the proxy statements. Our final sample consists of 35 airlines and 246 firm-year observations. Table 1 lists our sample of firms.

3.2. Measurement of Variables

3.2.1. Measurement of CEO Compensation

Consistent with prior research (e.g., Lambert and Larcker, 1987), we use the logarithm of cash compensation as the primary dependent variable for our empirical

Table 1. Sample firms.

	Firm Name
1	Air Midwest
2	Air Wisconsin Services Inc.
3	Airtran Holdings
4	Airways Corp
5	Alaska Airgroup
6	America West Holdings Co.
7	AMR Corp
8	ASA Holding Ltd
9	Atlantic Coast Airlines
10	CCAIR
11	Comair Holdings Inc
12	Conquest Airlines Corp
13	Continental Airlines Inc
14	Delta Air Lines Inc
15	Frontier Airlines Inc
16	Great Lakes Aviation
17	HAL Inc
18	Hawaiian Airlines Inc
19	Mesa Air Group
20	Mesaba Holdings Inc
21	Metro Airlines Inc
22	Midway Airlines Corp
23	Northwest Airlines Corp
24	Pan Am Corp
25	Pan Am Corp FLA
26	Reno Air
27	Skywest
28	Southwest Airlines Co
29	Stateswest Airlines Inc
30	Tower Air Inc
31	UAL Corp
32	USAIR Group Inc
33	Vanguard Airlines
34	Westair Holding Inc
35	Western Pacific Airlines

analysis. We also examine a broader definition of compensation to include the value of options granted during the year, and define total compensation as the sum of all cash and option-based compensation. As with cash compensation, both the option and total compensation are represented in logarithmic transformation.

We define *cash compensation* as the sum of salary, bonus, and other compensation.[6] We separately estimate the value of the options granted during the year using the Black–Scholes formula assuming that the options are held 70% of the option's stated maturity (Huddart, 1994; Cuny and Jorion, 1995). The inputs needed to estimate the option compensation such as the number of options granted, exercise price, dividends, and time to maturity are obtained from the proxy statements and Compustat. We estimate volatility as the square root of the sample variance of daily

stock returns during the 120 trading days before the end of the fiscal year multiplied by 254 trading days of a typical year. Because stock option awards are granted throughout the year we consider that stock option grants in the first half of the year relates to reward for previous year's performance. Therefore, we classify options granted in the first half of the fiscal year as compensation for the previous year and those granted in the second half as compensation for the current year.[7]

3.2.2. Measurement of Passenger Load Factor, Financial Performance Measures and Other Determinants of CEO Compensation

We measure passenger load factor (*Plf*) as the number of passenger-miles (i.e., the total number of miles flown by all passengers) divided by the total number of seat miles available. Like prior research (Lambert and Larker, 1987; Sloan, 1993), we consider two financial performance measures: (i) the natural logarithm of (1 + fiscal year stock return) (*LnRet*) and (ii) accounting return on assets (*Roa*). We compute return on assets (*Roa*) as income before extraordinary items scaled by total assets. We use the natural logarithm of sales as the proxy for size (*LnSales)*, and we use book-to-market (*Bm)* to capture growth opportunities.[8]

We use the volatility measure used in the computation of Black Scholes option value (*Vol*) as our proxy for firm risk. From the proxy statements we obtain the percentage of outstanding shares held by the CEO and use that as our measure of CEO ownership (*CEOown*). We measure CEO tenure (*Tenure*) as the number of years the CEO has been in that position at the end of the fiscal year.

3.3. Descriptive Statistics

Panel A of Table 2 presents the descriptive statistics for components of CEO compensation. The median cash compensation is $464,000 and the median stock option compensation is $37,000.[9] At the median, stock options represent about 6% of CEO compensation. However, more than 25% of the CEOs in our sample do not receive stock options. Excluding these firms the proportion of CEO compensation from stock options is close to 53%. The percentage of bonus to salary for our sample (62% at the mean) is comparable to traditional firms.[10]

Panel B reports the descriptive statistics for passenger load factor and proxies for various economic determinants of CEO compensation. Stock returns have a mean of 20% with a minimum of -81% and a maximum of 447%. The mean for CEO's stock ownership is 5% (median 1%) with a maximum of 80%. This percentage is somewhat higher than those reported by prior research. For example, Core et al. (1999) report an average ownership of 1.5% (median of 0.8%) and Yermack (1995) reports a mean of 2.41% (median of 0.14%).

Table 3 provides the correlation matrix for all the regression variables used in this study. Note that we present correlation statistics using logarithmic transformation of compensation variables to be consistent with the variables used in the empirical

Table 2. Descriptive statistics.

Panel A: Descriptive Statistics for CEO Compensation ($N = 246$)

(in thousands of $)	Mean	Std Dev.	Min	Q1	Median	Q3	Max
Salary	368	223	1	180	318	500	1139
Bonus	227	531	0	0	23	264	6390
Other	74	560	0	0	0	14	7478
Cshcomp	669	880	7	231	464	770	8153
Optcomp	1162	3244	0	0	37	887	26614
Totcomp	1831	3501	7	354	675	1695	28356

Panel B: Descriptive Statistics for Independent Variables

	Mean	Std Dev.	Min	Q1	Median	Q3	Max
Ret	0.20	0.72	−0.81	−0.23	0.04	0.48	4.47
Plf	0.59	0.10	0.35	0.51	0.61	0.67	0.80
CEOown	0.05	0.14	0.00	0.00	0.01	0.04	0.80
Sales ($ mil.)	3722.88	5300.77	5.57	188.14	473.20	6686.41	19703.00
Roa	0.02	0.20	−1.27	−0.02	0.04	0.07	1.04
Tenure (years)	7.69	6.15	0.00	3.00	6.00	11.00	25.00
Vol	0.56	0.27	0.19	0.38	0.51	0.86	1.82
Bm	0.49	0.63	−4.27	0.23	0.46	0.82	3.61

Cshcomp represents total cash compensation, i.e., salary plus bonus plus other. *Optcomp* represents stock option compensation. *Totcomp* is the sum of cash and stock options compensation.
Ret represents stock returns, estimated as the holding period return for the fiscal year. *Plf* is number of passenger miles flown divided by total available mile seats. *CEOown* is the percentage of the company stock owned by the CEO at the end of the fiscal year. *Roa* represents return on assets determined as income before extraordinary items divided by total assets at the end of the fiscal year. *Tenure* is the number of years between the appointment of the CEO and the end of the fiscal year. *Vol* is the standard deviation of returns for 120 trading days before the end of the fiscal year times the square root of 254 trading days in a typical year. *Bm* is book to market ratio.

specification. Consistent with previous research, we find that accounting (*Roa*) and financial (*Lnret*) performance measures are positively related to both cash and option compensation. Of particular importance, passenger load factor (*Plf*) is significantly correlated with cash compensation (Pearson correlation of 0.54) but not with option compensation. Thus, based on univariate analysis, it appears that passenger load factor is relevant primarily for CEO cash compensation. Whether passenger load factor provides incremental information to accounting and financial performance measures is examined next.

4. Results

In this section, we present the results relating CEO compensation to passenger load factor after controlling for financial performance measures. First, we consider a levels specification where we examine the association between the level of CEO compensation and the level of performance measures. To control for potential

Table 3. Correlation statistics.

	LnCshcomp	*LnOptcomp*	*LnTotcomp*	*LnSales*	*LnRet*	*Roa*	*Plf*	*CEOown*	*Tenure*	*Vol*	*Bm*
LnCshcomp		**0.28**	**0.75**	**0.74**	**0.18**	**0.14**	**0.54**	**−0.39**	−0.03	**−0.35**	0.03
		(0.00)	**(0.00)**	**(0.00)**	**(0.00)**	**(0.03)**	**(0.00)**	**(0.00)**	(0.62)	**(0.00)**	(0.68)
LnOptcomp	**0.33**		**0.71**	**0.21**	**0.19**	**0.14**	0.09	**−0.25**	−0.11	**−0.21**	0.10
	(0.00)		**(0.00)**	**(0.00)**	**(0.00)**	**(0.03)**	(0.12)	**(0.00)**	(0.08)	**(0.00)**	(0.10)
LnTotcomp	**0.80**	**0.76**		**0.64**	**0.18**	**0.17**	**0.46**	**−0.40**	**−0.14**	**−0.31**	0.06
	(0.00)	**(0.00)**		**(0.00)**	**(0.00)**	**(0.01)**	**(0.00)**	**(0.00)**	**(0.02)**	**(0.00)**	(0.31)
LnSales	**0.81**	**0.27**	**0.67**		0.12	0.11	**0.70**	**−0.31**	**−0.15**	**−0.47**	0.04
	(0.00)	**(0.00)**	**(0.00)**		(0.07)	(0.07)	**(0.00)**	**(0.00)**	**(0.02)**	**(0.00)**	(0.56)
LnRet	**0.20**	**0.18**	**0.21**	0.09		**0.24**	0.01	**−0.20**	0.04	**−0.37**	−0.12
	(0.00)	**(0.00)**	**(0.00)**	(0.18)		**(0.00)**	(0.84)	**(0.00)**	0.51	**(0.00)**	(0.05)
Roa	**0.20**	**0.21**	**0.23**	0.02	**0.35**		0.08	0.06	0.06	**−0.17**	**0.23**
	(0.00)	**(0.00)**	**(0.00)**	(0.74)	**(0.00)**		(0.19)	(0.31)	(0.32)	**(0.01)**	**(0.00)**
Plf	**0.59**	**0.15**	**0.48**	**0.71**	−0.01	0.00		**−0.23**	**−0.35**	**−0.22**	0.02
	(0.00)	**(0.02)**	**(0.00)**	**(0.00)**	(0.82)	(0.96)		**(0.00)**	**(0.00)**	**(0.00)**	(0.76)
CEOown	**−0.48**	**−0.22**	**−0.44**	**−0.62**	−0.11	0.09	**−0.47**		**0.28**	**0.39**	0.09
	(0.00)	**(0.00)**	**(0.00)**	**(0.00)**	(0.10)	(0.14)	**(0.00)**		**(0.00)**	**(0.00)**	(0.18)
Tenure	0.04	**−0.15**	−0.09	−0.07	0.05	0.17	**−0.29**	**0.21**		0.05	0.10
	(0.56)	**(0.02)**	(0.09)	(0.25)	(0.40)	(0.00)	**(0.00)**	**(0.00)**		(0.41)	(0.13)
Vol	**−0.40**	**−0.16**	**−0.31**	**−0.55**	**−0.27**	−0.12	**−0.26**	**0.40**	−0.04		−0.08
	(0.00)	**(0.01)**	**(0.00)**	**(0.00)**	**(0.00)**	(0.05)	**(0.00)**	**(0.00)**	(0.51)		(0.24)
Bm	0.09	**0.13**	0.11	**0.18**	**−0.23**	−0.00	0.06	**−0.14**	0.09	**−0.23**	
	(0.15)	**(0.04)**	(0.09)	**(0.00)**	**(0.00)**	(0.97)	(0.35)	**(0.03)**	(0.16)	**(0.00)**	

Pearson correlations reported in the upper triangle and Spearman correlations in the lower triangle. *p*-values reported in parenthesis (two-sided). Significant *p*-values at the 5% level are highlighted in bold.

LnCshcomp is the logarithm of the total CEO cash compensation. *LnOptcomp* is logarithm of the stock option compensation. *LnTotcomp* is logarithm of the sum of cash and stock options compensation. *LnSales* is the logarithm of sales as a proxy for firm size. *LnRet* is the logarithm of the 1 plus the holding period return for the fiscal year. *Roa* is the return on assets for the fiscal year calculated as income before extraordinary times divided by total assets. *Plf* is number of passenger miles flown divided by total available mile seats. *CEOown* is the percentage of shares held by the CEO at the end of the fiscal year. *Tenure* is the time in years from the appointment as CEO and the end of the fiscal year. *Vol* is the standard deviation of daily stock returns for 120 days before the end of the fiscal year times the square root of 254 trading days in a year. *Bm* is book to market ratio.

omitted variables, we control for other determinants of CEO compensation. Specifically, we estimate the following empirical specification:

$$LnCshcomp,\ LnOptcomp,\ LnTotcomp = \beta_1 + \beta_2{}^{*}Plf + \beta_3{}^{*}LnRet + \beta_4{}^{*}Roa + \beta_5{}^{*}LnSales + \beta_6{}^{*}Vol + \beta_7{}^{*}CEOown + \beta_8{}^{*}Tenure + \beta_9{}^{*}Bm + \varepsilon \quad (3)$$

where *LnCshcomp, LnOptcomp, LnTotcomp* represents the natural logarithm of cash, option, and total compensation, respectively. The theoretical discussion indicates that the sign for the passenger load factor (*Plf*) coefficient is expected to be positive for cash compensation. For option compensation, however, we do not have a sign prediction because options may be used to reward long-term performance as well as current operational performance. Consequently, with respect to total compensation, although the predicted relation is positive, the power of tests is likely lower. *LnRet* and *Roa* proxy for stock and accounting measures of performance; both are expected to be positive.[11] *LnSales* controls for size, and is also predicted to be positive. Based on the discussion in Section 2, we predict the coefficient on *Vol* and *Tenure* to be positive and that of *Bm* to be negative.[12] In estimating the regression specifications, we eliminate observations with studentized residuals greater than two to control for outlier observations.

Table 4 reports the results of estimating equation (3). We find that CEOs of larger firms (as proxied by *LnSales*) have higher compensation; we also find that stock performance is significantly related to compensation. In contrast, accounting measures of performance, *Roa*, is not significantly related to any of the compensation measures. The coefficient on our proxy for non-financial performance measure, passenger load factor (*Plf*), is positive (coefficient = 1.83) and significant ($t = 4.01$; $p < 0.01$) for cash compensation, consistent with the predictions. In addition, the inclusion of passenger load factor increases the explanatory power of the model by 10%. An economic interpretation of our findings is that a 10% increase in *Plf* (one standard deviation) at the mean translates into an additional $134,000 in cash compensation.[13] The coefficient is negative (although not significant) for option compensation consistent with option compensation being associated with long-term incentives rather than being used to reward current performance.[14] The coefficient on *Plf* is positive but not significant for total compensation.

Broadly, our evidence is consistent with our hypothesis that non-financial performance measures are relevant to contracting, especially in determining cash compensation. Moreover, the significance of passenger load factor to cash compensation is consistent with current performance being rewarded with the cash component of compensation. This also highlights the importance of examining the relation between passenger load factor and the two components of compensation separately.

The coefficient on the percentage of ownership held by the CEO (*CEOown*) is negative and significant, consistent with the agency theory argument that CEOs with

Table 4. Regression results relating the level of CEO compensation with passenger load factor after controlling for financial performance measures.

		Dependent Variable		
Independent Variables	Predicted Sign	*LnCshcomp* (1)	*LnOptcomp* (2)	*LnTotcomp* (3)
Plf	+/?/+	1.83**	−5.00	1.04
		(4.01)	(−1.56)	(1.24)
LnRet	+	0.19**	1.33**	0.35**
		(3.13)	(3.05)	(3.17)
Roa	+	0.19	0.48	0.29
		(1.27)	(0.44)	(1.04)
LnSales	+	0.25**	0.43**	0.35**
		(13.07)	(2.53)	(7.76)
Vol	+	0.13	1.49	0.57*
		(0.91)	(1.46)	(2.17)
CEOown	?	−0.94**	−5.72**	−1.90**
		(−3.49)	(−3.18)	(−3.83)
Tenure	+	0.02**	0.02	0.02*
		(3.98)	(0.57)	(2.09)
Bm	−	0.005	0.75*	0.11
		(0.10)	(2.12)	(1.23)
Adjusted R^2 (%)		69.29%	11.02%	49.95%

t-statistics (presented in parenthesis) are based on white-adjusted standard errors. Regressions are estimated after removing outliers with a *R*-student value above 2. **, * indicate significance at the 1 and 5% level respectively (one-tailed when the coefficient sign is predicted, two-tailed otherwise).
LnCshcomp is the logarithm of the total CEO cash compensation. *LnOptcomp* is logarithm of the stock option compensation. *LnTotcomp* is logarithm of the sum of cash and stock options compensation. *LnSales* is the logarithm of sales as a proxy for firm size. *LnRet* is the logarithm of the 1 plus the stock returns for the fiscal year. *Roa* is the return on assets for the fiscal year calculated as income before extraordinary times divided by total assets. *Plf* is number of passenger miles flown divided by total available mile seats. *CEOown* is the percentage of shares held by the CEO held at the end of the fiscal year. *Tenure* is the time in years from the appointment as CEO and the end of the fiscal year. *Vol* is the standard deviation of daily returns for 120 days before the end of the fiscal year times the square root of 254 trading days in a year. *Bm* is book to market ratio.

lower ownership require stronger incentives and, accordingly higher levels of compensation. Tenure is positively associated with both cash and total compensation, consistent with CEO power being translated in higher compensation. However, this variable is not related to option compensation. Finally larger book-to-market (*Bm*) is associated with higher option compensation. While this latter result is against expectations, it is consistent with options being granted to motivate improvements in performance for companies that are under-performing (high book-to-market ratio).

While we have attempted to control for potential omitted variables in the levels specification in equation (3), it may still suffer from coefficient biases due to unknown correlated omitted variables.[15] Hence, as an alternative test of the relevance of non-financial measures in CEO compensation we use a "change" specification of equation (3) described below:

$$\Delta LnCshcomp,\ \Delta LnOptcomp,\ \Delta LnTotcomp = \beta_1 + \beta_2{}^*\Delta Plf + \beta_3{}^*\Delta LnRet + \beta_4{}^*\Delta Roa + \beta_5{}^*\Delta LnSales + \beta_6{}^*\Delta Vol + \beta_7{}^*\Delta CEOown + \beta_9{}^*\Delta Bm + \varepsilon \quad (4)$$

where Δ represents the change operator.[16] Note that we have excluded the change in tenure as a control variable because it will be one for almost all observations. As with the levels specification, we eliminate observations with studentized residuals greater than two to control for outliers.

Table 5 reports the results of the change specification (4). In contrast to the results in the levels specification we do not find a significant relation between change in stock return performance measures ($\Delta LnRet$) and any of the compensation measures. However, we do find a positive relation between change in accounting performance measure, ΔRoa, and total compensation (coefficient = 0.09; $p < 0.05$). The coefficient on the change in passenger load factor, ΔPlf, is positive (coefficient = 1.76) and significantly ($t = 1.96$; $p < 0.05$) associated with changes in cash compensation, suggesting that our previous findings are

Table 5. Regression results relating the change of CEO compensation with the change in passenger load factor after controlling for change in financial performance measures.

		Dependent Variable		
Independent Variables	Predicted Sign	Δ *LnCshcomp* (1)	Δ *LnOptcomp* (2)	Δ *LnTotcomp* (3)
Δ *Plf*	+/?/+	1.76*	−3.69	1.53
		(1.96)	(−0.36)	(0.61)
Δ *LnRet*	+	0.03	0.48	0.09
		(0.78)	(1.23)	(0.92)
Δ *Roa*	+	0.19	2.26	0.90*
		(1.04)	(1.11)	(1.80)
Δ *LnSales*	+	0.30*	−1.12	−0.27
		(2.04)	(−0.70)	(−0.69)
Δ *Vol*	+	−0.04	2.01*	0.48*
		(−0.45)	(1.74)	(1.72)
Δ *CEOown*	?	−0.15	−2.97	−6.72**
		(−0.09)	(−0.60)	(−5.59)
Δ *Bm*	−	0.01	0.25	0.10
		(0.13)	(0.50)	(0.78)
Adjusted R^2 (%)		5.31%	0.00%	13.45%

t-statistics (presented in parenthesis) are based on white-adjusted standard errors. Regressions are estimated after removing outliers with a *R*-student value above 2. **, * indicate significance at the 1 and 5% level respectively (one-tailed when the coefficient sign is predicted, two-tailed otherwise).

Δ represents change operator. *LnTotcomp* is the logarithm of the sum of cash and stock options compensation. *LnSales* is the logarithm of sales as a proxy for firm size. *LnRet* is the logarithm of the 1 plus the stock returns for the fiscal year. *Roa* is the return on assets for the fiscal year calculated as income before extraordinary times divided by total assets. *Plf* is number of passenger miles flown divided by total available mile seats.

robust to this alternative specification. We also find that the coefficient for changes in passenger load factor is positive, but not significant for total compensation consistent with the power of the test being lower for this specification compared to the cash specification. However, as before, we do not find a significant relation between change in passenger load factor and option compensation (coefficient $= -3.69$; $t = -0.36$). Hence, we do not find support for the hypothesis that option compensation being used to reward either current performance with respect to capacity utilization or motivate long-term improvements in capacity utilization.

5. Additional Analyses

Our main hypothesis predicts a positive association between non-financial performance measures and CEO compensation. However, existing theory allows extending this hypothesis to explore cross-sectional differences in this association. We consider two important factors that are hypothesized to affect the importance of non-financial performance measures: (i) noise in other performance measures (Noise hypothesis) and, (ii) the extent of CEO power (Influence hypothesis). We explore these hypotheses below.

Theory (e.g., Banker and Datar, 1989) suggests that the relative weight placed on a performance measure in compensation contracts is influenced by the noise inherent in that measure. In particular, the relative weight on a performance measure is a decreasing function of the noisiness of that measure. Consistent with this theory, prior research by Lambert and Larcker (1987) documents that the relative weight on accounting (market-based) performance measure is positively related to the noise in the market-based (accounting) performance measure. In related work, Bushman et al. (1996) find that noise in accounting and market-based performance measures are positively associated with individual performance measures in compensation contracts. More recently, Ittner et al. (1997) report a higher relative weight on non-financial measures in determining bonuses when the noise in stock returns is higher. Thus, we predict the weight on passenger load factor to increase with the noise in financial performance measures (Noise hypothesis).

Another variable that has been argued to affect the design of compensation contracts is the power of the CEO. CEOs may attain power in various ways, and thus, influence their compensation. First, tenure may signal their ability and allow CEOs to leverage that signal to gain power (Core et al., 1999). Second, CEOs may gain power through their influence on the board of directors (Ittner et al., 1997), and in particular, if they also hold the chairperson of the board position (Boyd, 1994). Finally, CEO stock ownership as well as stock ownership of the executive team can provide the CEO with additional power. Powerful CEOs will choose performance measures that they can influence more readily to increase their expected compensation.[17] Thus, we predict that the weight on passenger load factor will increase with CEO power (Influence hypothesis).

To test the two hypotheses we interact *Plf* with proxies for noise in financial performance measures and CEO power. We use the stock return volatility (*Vol*) as our proxy for noise in the stock return measure. As with prior research, we use CEO tenure (*Tenure*), CEO percentage stock ownership (*CEOown*), percentage of members of the board that are also executives at the company (*Execbrd*), stock ownership by top managers (*Insown*), and whether the CEO is also chairperson of the board (*CEOChair*) to proxy for CEO power.

Table 6 presents our empirical findings on the sensitivity of the weight on *Plf* to noise and CEO power. We restrict this sensitivity analysis to cash compensation where previous results indicate that non-financial performance measures are associated with compensation. Consistent with our previous analyses we present a "levels" as well as a "changes" specification.

Column (1) reports results from the "levels" specification. The results are consistent with our hypothesized predictions except for insider ownership, tenure and CEO ownership. We find that the interaction between *Plf* and volatility is positive and significant (coefficient = 2.77, *t*-statistic = 2.10), indicating that for firm-years with higher stock return volatility, the association between cash compensation and passenger load factor is higher. This is consistent with non-financial performance measure receiving higher "weight" when financial measures (stock returns, in particular) are noisier (Noise hypothesis). We also find that two out of the five proxies for CEO power are positive and statistically significant. Specifically, for firms with higher proportion of board members who are also executives of the firm the association between the level of cash compensation and passenger load factor is higher. The same is true with respect to situations where the CEO is also the chairperson of the board. These results are broadly consistent with the "Influence hypothesis" that the weight on non-financial performance measures is higher when the CEO has significant power over the board.

Notice that the coefficient on *Plf* is positive but statistically insignificant (coefficient = 0.54, $t = 0.58$). This is not surprising because the coefficient on *Plf* that represents the main effect becomes ambiguous when we include the interaction terms. That is, the coefficient on *Plf* now captures the weight on *Plf* for a firm where the proxies for the noise and the influence hypotheses are zero. Thus, to determine the net effect of *Plf* on CEO compensation we have to combine both the main effect and the interaction effects. By substituting the mean values for the various proxies it is easy to show that the combined effect of *Plf* on CEO compensation is positive.

Column (2) reports results from the "changes" specification. In contrast to the levels specification, we do not find significant coefficients on the interaction terms except for the CEO ownership interaction. Even with respect to CEO ownership interaction, the coefficient is weakly significant. Nevertheless, the main effect of passenger load factor, i.e., the coefficient on ΔPlf is significantly positive ($t = 4.00$). Thus, collectively, we view the evidence in Table 6 as providing weak support for both the Noise and the Influence hypotheses.

Table 6. Regression results of cross-sectional differences in the relation between CEO compensation and passenger load factor.

Independent Variables	Predicted Sign	Dependent Variable LnCshcomp (1)	Independent Variables	Predicted Sign	Dependent Variable Δ LnCshcomp (2)
Plf	+	0.54	Δ *Plf*	+	15.81**
		(0.58)			(4.00)
LnRet	+	0.16**	Δ *LnRet*	+	0.03
		(2.73)			(0.93)
Roa	+	0.26*	Δ *Roa*	+	0.31*
		(1.76)			(1.66)
LnSales	+	0.26**	Δ *LnSales*	+	0.41**
		(9.43)			(2.65)
Vol	+	−1.38	Δ *Vol*	+	0.06
		(−1.83)			(0.56)
CEOown	?	−1.58	Δ *CEOown*	?	−0.47
		(−0.59)			(−0.29)
Tenure	+	0.10**			
		(3.21)			
Bm	−	−0.03	Δ *Bm*	−	−0.01
		(−0.63)			(−0.32)
*Plf*Vol*	+	2.77*	Δ *Plf*Vol*	+	−5.53
		(2.10)			(−2.41)
*Plf*Tenure*	+	−0.13	Δ *Plf*Tenure*	+	−0.26
		(−2.46)			(−1.62)
*Plf*CEOown*	+	0.63	Δ *Plf*CEOown*	+	14.37
		(0.12)			(1.28)
*Plf*Execbrd*	+	1.04**	Δ *Plf*Execbrd*	+	−8.38
		(2.90)			(−1.41)
*Plf*Insown*	+	0.48	Δ *Plf*Insown*	+	−11.98
		(1.37)			(−1.86)
*Plf*CEOchair*	+	0.35*	Δ *Plf*CEOchair*	+	−4.72
		(2.33)			(−1.41)
Adjusted R^2 (%)		72.63 %			10.38%

t-statistics (presented in parenthesis) are based on white-adjusted standard errors. Regressions are estimated after removing outliers with a *R*-student value above 2. **, * indicate significance at the 1 and 5% level respectively (one-tailed when the coefficient sign is predicted, two-tailed otherwise).

Δ represents change operator. *LnCshcomp* is the logarithm of the total CEO cash compensation. *LnSales* is the logarithm of sales as a proxy for firm size. *LnRet* is the logarithm of the 1 plus the stock returns for the fiscal year. *Roa* is the return on assets for the fiscal year calculated as income before extraordinary times divided by total assets. *Plf* is number of passenger miles flown divided by total available mile seats. *CEOown* is the percentage of shares held by the CEO held at the end of the fiscal year. *Tenure* is the time in years from the appointment as CEO and the end of the fiscal year. *Vol* is the standard deviation of daily returns for 120 days before the end of the fiscal year times the square root of 254 trading days in a year. *Bm* is book to market ratio. *Execbrd* is the percentage of executives in the board of directors. *Insown* is the percentage ownership by executives and directors. *CEOchair* is a dummy variable that takes value of one if the CEO also chairs the board, zero otherwise.

6. Conclusions

This paper investigates the role of non-financial performance measures in CEO compensation. Focusing on one industry, the airline industry, where a specific non-financial performance measure, passenger load factor, is critical to a firm's success provides a unique setting to examine this research question. We use a research design that tests predictions from agency theory on the relevance of non-financial measures, regardless of whether such information is explicitly or implicitly used in contracting. Thus, our study extends past research that focused on the cross-sectional variation of the relative weight of non-financial measures for companies that explicitly disclose their use.

We find that passenger load factor is positively associated with CEO compensation in support of the hypothesis that non-financial measures have incremental information content about managers' actions beyond accounting and market-based performance measures. Also consistent with agency theory, we find that the association between the level of cash compensation and passenger load factor is enhanced when the noise inherent in the stock returns measure increases. We also find evidence that the weight on passenger load factor increases with CEO power. However, the evidence on cross-sectional differences in the relation between passenger load factor and compensation obtains only in the levels specification.

The study is subject to two caveats. First, the sample is limited to one industry and a specific non-financial performance measure. This limits the generalizability of our findings to other industries and a broader set of non-financial performance measures. Second, we merely document an association between non-financial performance measures and compensation. Thus, our evidence does not imply that these measures are actually used in compensation contracts. In other words, we cannot completely rule out the possibility that our proxy for non-financial performance measures is correlated with other subjective measures that are used in compensation contracts. Finally, our study examines a time period when financial performance of airline firms was relatively stable. In recent times, however, several airline firms have experienced severe financial distress. It is plausible that the weight placed on non-financial performance measures is a function of the level of financial performance measures. Examining whether the weight placed on non-financial performance measures for executive compensation is influenced by financial distress is an interesting question for future research.

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Notes

1. In related work, Bushman et al. (1996) use survey data to document the importance of individual performance evaluation of CEOs' actions in explaining their compensation. Arguably, individual performance evaluation could be based on non-financial performance measures. But, Bushman et al. (1996) find that for most of their sample firms it was "difficult to classify in a systematic fashion, reporting a complex variety of non-financial and qualitative performance measures, and sometimes vague references to the use of discretion and subjectivity in determining awards." (p. 171)
2. In contemporaneous work, Srinivasan et al. (2002) examine the relevance of non-financial measures in top management compensation for firms in the airline industry. Our paper is distinct from theirs in two respects. First, they focus on a different set of performance measures such as customer satisfaction, number of mishandled bags, and number of complaints. Their results indicate that only one measure, mishandled baggage, is associated with CEO compensation. It is unlikely that mishandled baggage is correlated with passenger load factor because they capture different attributes of performance. Hence, both performance measures can coexist in contracting. Second, they consider only a levels specification whereas we consider both a levels and a changes specification.
3. For example, Reno Air in its 1998 10-K states: "The Company's business is characterized, as is true for the airline industry generally, by high fixed costs relative to revenues and low profit margins. A slight change in fare levels or *load factors* can have a substantial impact on the Company's revenues. (…) In addition, the Company's business is highly sensitive to general economic conditions. Any reduction in airline passenger traffic (whether general or specific to the Company) may materially and adversely affect the Company's financial position" (emphasis added).
4. Typically, increased capacity utilization is associated with better economic performance. Note that if capacity utilization is close to 100%, the airline may be forgoing existing demand that it cannot satisfy with the existing airplanes. The average capacity utilization for our sample is 61.5%, a point where additional capacity utilization is considered to improve performance.
5. Lambert and Larcker (1987) run firm-specific time series regressions that do not suffer from the omitted variable problem.
6. Other compensation usually includes rent payments or moving expenses covered by the firm. Inferences are unchanged if other compensation is excluded in our variable definitions.
7. The timing within the year of the option grants is based on the expiration date of the options granted as reported in the proxy statements.
8. We include the logarithm of market value of equity both as an alternative and an additional proxy for size and our inferences are unaltered. We also include return on equity as an alternative accounting measure; inferences are unaltered.
9. We focus our discussion on the median rather than the mean because given the underlying distribution the median is more informative as a descriptive statistic.
10. For example, statistics in Bushman et al. (1996) suggest a ratio close to 50%.
11. We do not use the logarithmic transformation of *Roa* because of the significant number of negative *Roa*s in the sample (see Table 2). Also, our inferences are unaffected by using the logarithmic transformation of *Plf*.
12. Note that *Bm* captures the inverse of growth opportunities and hence, the relation between compensation and *Bm* is predicted to be negative.
13. The impact of the 10% change is estimated as the change from the mean of cash compensation when *Plf* increases 10% from its mean. The impact of a standard deviation change in returns over total compensation is estimated at $468,000.
14. We also run a Tobit specification when the dependent variable is option compensation because for a significant number of observations, the option compensation is zero. Inferences are unaltered. Alternatively, we estimated the specification with observations that have non-zero option compensation and find that the coefficient on passenger load factor is positive and statistically significant.

15. We also examine whether passenger load factor is related to compensation after including an accounting measure of capacity utilization, viz., sales turnover. Our results (unreported) suggest that passenger load factor continues to be positively related to compensation.
16. Our inferences are unaltered when we estimate equation (4) excluding the control variables.
17. An alternative view is that CEOs can manipulate rather than influence non-financial performance measures (Ittner et al., 1997).

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